ASHLEY K. BALDRIDGE, PHD

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EDUCATION

PhD in Biology, 2007-2013

University of Notre Dame, Notre Dame, IN. Advisor: Dr. David M. Lodge

Dissertation title: "Invasive rusty crayfish (Orconectes rusticus): community impacts and potential for ecosystem recovery."

MA in Biology, 2004-2006

Smith College, Northampton, MA. Advisor: Dr. L. David Smith

Thesis title: "The role of phenotypic plasticity in the interaction between an introduced crab predator and its native snail prey."

BS in Biology, 1997-2001

Michigan Technological University, Houghton, MI

PUBLICATIONS

Peer Reviewed

- Baldridge, A.K. and D.M. Lodge. 2014. Long-term studies of crayfish-invaded lakes reveal limited potential for macrophyte recovery from the seed bank. Freshwater Science 33(3):788-797.
- Sargent, L.W., A.K. Baldridge, M. Vega, K. Towle, and D.M. Lodge. 2014. A trematode parasite alters growth, feeding behavior, and demographic success of invasive rusty crayfish (Orconectes rusticus). Oecologia DOI 10.1007/s00442-014-2939-1.
- **Baldridge**, A.K. and D.M. Lodge. 2013. Intraguild predation between spawning smallmouth bass and nest-raiding crayfish: implications for bass nesting success. Freshwater Biology 58:2355-2365.
- Morse, J.W., A.K. Baldridge, and L.W. Sargent. 2013. Invasive crayfish Orconectes rusticus (Decapoda, Cambaridae) is a more effective predator of substrate nesting fish eggs than native crayfish (O. virilis). Crustaceana 86: 387-402.
- Lodge, D.M., A. Deines, F. Gherardi, D.C.J. Yeo, T. Arcella, A.K. Baldridge, M.A. Barnes, W.L. Chadderton, J.L. Feder, C.A. Gantz, G.W. Howard, C.L. Jerde, B.W. Peters, J.A. Peters, L.W. Sargent, C.R. Turner, M.E. Wittmann, and Y. Zeng. 2012. Global introductions of crayfishes: evaluating impact of species invasions on ecosystem services. Annual Review of Ecology, Evolution, and Systematics 43: 449-472.
- Kreps, T.M., A.K. Baldridge, and D.M. Lodge. 2012. The impact of an invasive predator (Orconectes rusticus) on freshwater snail communities: insights into habitat-specific effects from a multilake long-term study. Canadian Journal of Fisheries and Aquatic Sciences 69:1164-1173.
- Choate, D.M., C.M. Prather, M.J. Michel, A.K. Baldridge, M.A. Barnes, D. Hoekman, C.J. Patrick, J. Rüegg, and T.A. Crowl, 2012. Integrating theoretical components: a graphical model for graduate students and researchers. BioScience 62:594-602.

Baldridge, A.K. and L.D. Smith. 2008. Temperature constraints on phenotypic plasticity explain biogeographic patterns in predator trophic morphology. Marine Ecology Progress Series 365:25-34.

In Review

Spear, M., A.K. Baldridge, and E.K. Grey. In Revision. Current and future projected distribution of Red-Eared Slider turtles, *Trachemys scripta elegans* in the Great Lakes basin. Journal of Great Lakes Research.

Popular Literature

Barnes, M.A. and A.K. Baldridge. 2009. Louisiana crayfish: the good, the bad, and the delicious. LiveScience. http://www.livescience.com/environment/090403-btscrayfish.html. Posted April 03, 2009.

PRESENTATIONS

- Baldridge, A.K., G.L. Fahnenstiel, J.R. Liebig, T.F. Nalepa, S.A. Pothoven, E.S. Rutherford, and H.A. Vanderploeg. June 2014. Exploring the relative impacts of climate change and Dreissenid mussels on Lake Michigan zooplankton. Adaptation in the Great Lakes Region Conference. University of Michigan, Ann Arbor, MI.
- Baldridge, A.K., G.L. Fahnenstiel, J.R. Liebig, T.F. Nalepa, S.A. Pothoven, E.S. Rutherford, and H.A. Vanderploeg. May 2014. Exploring the relative impacts of climate change and dreissenid mussels on the Lake Michigan zooplankton community. 57th Annual Conference of the International Association of Great Lakes Research. Hamilton, Ontario.
- **Baldridge**, A.K. February 2014. Buying time: evaluating costs and benefits of delaying action to control invasive species. Conservation Ecology Seminar Series, School of Natural Resources and Environment, University of Michigan, Ann Arbor, MI.
- Baldridge, A.K. (Invited Lecturer). November 2013. Impacts of invasive species on lake food webs. Aquatic Communities and Ecosystems Course, University of Calgary, Calgary, AB, Canada.
- Grey, E.K., F. Kraus, A.K. Baldridge, R. Keller, and D.M. Lodge. June 2013. Herpetofauna risk assessment for the Great Lakes, 56th Annual Conference of the International Association of Great Lakes Research. West Lafayette, IN.
- Baldridge, A.K., and D.M. Lodge. June 2013. Intraguild predation between spawning smallmouth bass and nest-raiding crayfish: implications for bass nesting success. 56th Annual Conference of the International Association of Great Lakes Research. West Lafayette, IN.
- Spear, M., E.K. Grey, A.K. Baldridge, and D.M. Lodge. April 2013. Species distribution modeling of Trachemys scripta elegans in the Great Lakes region under current and future climate scenarios. Poster presented by M. Spear. Climate Change and the Common Good Conference. Notre Dame, IN.
- Baldridge, A.K., and D.M. Lodge. August 2012. Short and long-term impacts and recovery potential for aquatic plant and snail communities in lakes impacted by an invasive omnivore. 97th Annual Meeting of the Ecological Society of America. Portland, OR.
- Baldridge, A.K. (Invited Discussion Leader). April 2012. Leadership through outreach. Schmitt Foundation Social Change Through Leadership Conference. Chicago, IL.
- **Baldridge**, A.K. July 2011. Influence of a brief pulse of fish eggs in rusty crayfish (*Orconectes* rusticus) diets on crayfish growth. University of Wisconsin Trout Lake Research Station Seminar Series. Boulder Junction, WI.

- Baldridge, A.K., and D.M. Lodge. March 2011. Reciprocal predation between bass and invasive crayfish: energy costs vs. gains for nest-guarding small-mouth bass. Academic Recognition Poster Session. University of Notre Dame, Notre Dame, IN.
- Baldridge, A.K., and D.M. Lodge. December 2010. Intraguild predation between bass and invasive crayfish: energy costs vs. gains for nest-guarding smallmouth bass. 71st Midwest Fish and Wildlife Conference. Minneapolis, MN.
- Baldridge, A.K., and D.M. Lodge. September 2010. Rusty crayfish impacts in Lake Ottawa and potential control methods. Michigan Department of Natural Resources and the Environment Public Meeting. Iron River, MI.
- Baldridge, A.K., and L.D. Smith. August 2009. Dispatches from an invasion front: Does water temperature determine the outcome of an ecological arms race between an introduced crab and its armored prey? Poster presented by L.D. Smith. Sixth International Conference on Marine Bioinvasions. Portland, OR.
- Baldridge, A.K. (Invited Panelist). October 2008. Tales from the front lines: experiences at the interface of science and policy. Compass Policy Training Workshop. Notre Dame, IN.
- Baldridge, A.K., and L.D. Smith. May 2007. Phenotypic plasticity in claw morphology of the introduced crab, Carcinus maenas, in response to natural variation in prey armor and water temperature. Fifth International Conference on Marine Bioinvasions. Cambridge, MA.

RESEARCH and WORK EXPERIENCE

Research Benthic Ecologist, 2014-present

National Oceanic and Atmospheric Administration Great Lakes Environmental Research Lab Conducting experiments and field surveys to improve our understanding of quagga mussel natural history. Maintaining long-term benthic surveys in southern Lake Michigan.

Postdoctoral Research Fellow, 2013-2014

Cooperative Institute for Limnology and Ecosystems Research and The Water Center, University of Michigan School of Natural Resources and Environment and National Oceanic and Atmospheric Administration Great Lakes Environmental Research Lab Project Supervisor: Dr. Ed Rutherford. Project: Impacts of Climate Change and Invasive Species on the Lake Michigan Food Web. Compiled long-term biotic and abiotic data for southern Lake Michigan. Analyzed data using structural equation modeling and path analysis.

Research Assistant, 2012-2013

University of Notre Dame, Environmental Change Initiative

Project Supervisor: Dr. Erin K. Grey. Project: Risk Assessment of Organisms in Trade. Compiled trait-based database for amphibians, reptiles, and crayfish. Conducted quantitative analysis of traits associated with successful introductions, and environmental niche modeling for the Great Lakes region.

PhD Candidate. 2007-2013

University of Notre Dame, Department of Biological Sciences

Conducted an investigation of complex food web interactions between rusty crayfish and native fish, plant, and snail communities. Performed extensive field surveys and complimentary lab experiments. Analyzed long-term data sets and developed a bioeconomic model to help inform management plans of invasive species. Hired and managed field-based research teams.

Program Coordinator, 2006-2007

Five College Coastal & Marine Sciences Program, Five Colleges, Inc., Amherst, MA Supervisor: Dr. Paulette Peckol. Promoted and facilitated student involvement in marinerelated studies and research. Composed the monthly newsletter. Publicized and filled scholarship awards for summer internships and other research opportunities. Organized student research symposia and guest speaker events.

Master's Candidate, 2004-2006

Smith College, Department of Biological Sciences

Conducted lab experiments with complimentary field surveys in the Gulf of Maine to examine the role of phenotypic plasticity in the interactions between the invasive green crab and native snail prey.

TEACHING and MENTORING EXPERIENCE

Mentoring Students on Independent Projects

2012-2013: Margaret Corcoran, Michael Spear*°

2011-2012: Stephen Elser*, Claire Soisson*

2010-2011: Victoria Novitsky Blackhorse, Matthew Schirtzinger*, June Shrestha*, Bradley Wells*, David Chan*

2009-2010: Brian Argus, Jessica Choi*, Joshua Morse*°, Matthew Smith

2008-2009: Margaret Baker*, Grace Loppnow, Sam Pecoraro,

2007-2008: Jacqueline Chase*, Justin Poinsatte, Mia Puopolo

2004-2006 (Smith College): Catherine Masek, April Whiting, and Yi Zhang

- * Students who presented their work at organized meetings
- ° Students who lead-authored a publication on their research

University of Notre Dame

Teaching Apprentice, Aquatic Conservation, Spring 2012

Developed lectures and led class discussions for 13 undergraduate and graduate students. Worked with mentor, Dr. David Lodge, on course development and student assessment.

Teaching Assistant, Aquatic Ecology Laboratory, Fall 2009

Assisted 30 students on field trips and in-lab processing of benthic invertebrates, zooplankton, phytoplankton, and water chemistry samples. Graded final reports.

Teaching Assistant, Biostatistics Tutorial, Spring 2009

Lectured 15 students on biostatistics and guided analyses using the programming language R. Graded weekly homework assignments, exams, and final reports.

Smith College

Teaching Assistant, Various Courses, 2004-2006

Invertebrate Diversity, Marine Ecology, Plant Systematics (twice), and Vertebrate Biology labs. Set up lab activities and experiments. Assisted students in the lab and on field trips.

Professional

English Teacher, Changchun Institute of Technology, Changchun, China, 2001-2003 Taught Oral English, Basic and Advanced Writing, and American Culture through Film. Assisted Chinese colleagues with lesson preparation and content accuracy. Received two Excellence in Teaching awards (2002, 2003).

FUNDING

Fellowships

- CILER and Water Center Postdoctoral Research Fellowship 2013-present
- National Science Foundation Integrated Graduate Education and Research Traineeship; Global Linkages Of Biology, Environment, and Society (GLOBES) program; 2007-2012
- Arthur J. Schmitt Foundation Graduate Fellowship; 2007-2012
- Bayer Predoctoral Research Fellowship; Fall 2011 and Summer 2012
- University of Notre Dame Environmental Research Center Mentoring Fellowship: Summers 2008, 2009, 2010 and 2011
- Elizabeth B. Horner Fellowship; Summer 2006
- Wilens Research Fellowship; 2004-2006

Research Grants

- Notebaert Professional Development Grant; Summer 2012; \$500
- Graduate Student Union Conference Fund; Summer 2012; \$500
- Zahm Research Travel Fund; Fall 2011; \$1350
- PADI Foundation Environmental Research Grant; Summer 2011; \$4250
- Sigma Xi Grant in Aide of Research; Summer 2009; \$800

Scholarships

- Board of Control Scholarship; 1997-2001
- Michigan Competitive Scholarship; 1997-2001
- N. S. Mackie Scholarship; 1999-2000
- Class of 1950 Scholarship; 1999-2000

COMMUNITY SERVICE/EDUCATIONAL OUTREACH

- Volunteer: Great Lakes National Ocean Sciences Bowl, 2014
- Science Olympiad Coach: Stanley Clark Elementary Invasive Species team, 2013
- Committee chair: Notre Dame-South Bend Science Café (a monthly science seminar geared towards a general audience), 2010-2012
- Science consultant for Sooper Yooper: the Quest of the Blue Crew by Mark Newman, a children's book about invasive species in the Great Lakes region, 2012
- Aquatic invertebrate consultant: St. Joseph County Parks biodiversity survey, 2012
- Presenter: UW Trout Lake Research Station summer open house, 2011
- Science fair judge and outreach volunteer: South Bend area schools (K-12) and the Northern Indiana Regional Science and Engineering Fair, various events, 2007-2011
- Contributor: Invasivore.org (an educational blog about eating invasive species)

UNIVERSITY SERVICE

- Biology Representative, GLOBES Fellowship Executive Committee, 2011-2012
- Officer, Biology Graduate Student Organization, 2008-2010
- Coordinator, Biology Student Seminar Series, 2008-2009

REVIEWER

Aquatic Conservation, Biological Invasions, Freshwater Biology, Freshwater Science, Harmful Algae, Journal of Great Lakes Research, Journal of Experimental Marine Biology and Ecology, Proceedings of the National Academy of Sciences, Springer Publishing Company

PROFESSIONAL MEMBERSHIPS

- Sigma Xi Honor Society, Smith College Chapter
- Ecological Society of America
- International Association of Great Lakes Research

SKILLS and CERTIFICATIONS

- Proficiency in R, STATA, SAS, JMP
- Proficiency in Elemental Analysis, Stable Isotope Analysis
- Familiarity with ArcGIS
- SCUBA certified (YSCUBA)
- Certificate in Teaching Excellence in Biological Sciences (University of Notre Dame)
- Conversational in Mandarin Chinese